a control structure inputted into said circuitry to initiate a system control based on the ratio of light intensities.

REMARKS

The Office Action mailed June 17, 2003 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-4, 6-9, 15-31, 37 and 38 are pending in this application. Claims 1-4, 6-9, 15-31, 37 and 38 stand rejected. Claims 5, 10-14, and 32-36 have been canceled.

The rejection of Claims 1-4, 23-26, 37 and 38 under 35 U.S.C. § 103(a) as being unpatentable over Conklin et al. (U.S. Patent 3,358,148) in view of Taylor et al. (U.S. Patent 5,828,458) is respectfully traversed.

Conklin et al. describe a haze measuring apparatus that includes a light source (1) including a bulb (2) that is rigidly mounted in a metal block (4), and an orifice (5) that allows light to pass from bulb (2) to transparent sample tube (6). A filter (7) is installed between light source (1) and orifice (5) to make the light essentially monochromatic. Diametrically opposed to orifice (5) is an orifice (8) which allows light to pass from the sample tube to a transmittance photocell (9). An orifice (11) is located at a fixed angle from orifice (8) and allows light to pass from the sample tube through a lens (12) to a scatter photocell (13). Conklin et al. also describe that the haze measuring apparatus includes a hinge (4b) and a clasp (4c) whereby a discrete section (4) (sic) can be moved with respect to a discrete section (4a), and that the invention can be used to measure a plurality of small samples or that the sample tube can be an integral part of a plant process stream and continuous measurement of such a stream would be possible. Conklin et al. further describe that the haze measuring apparatus includes a meter (21) or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze.

Taylor et al. describe a turbidity sensor (10) that senses the turbidity of a fluid flowing along a flow path (12), from a fluid source (14) to an outlet (16). A test cell (18) along the flow path includes an LED (21), and at least one detector (22), preferably including at least one photodiode. The detector includes photodiodes (24) and (32) for sensing light at positions separated from the source LED. Taylor et al. also describe that one type of

monitoring process analyzes signal changes in the outputs from the photodiodes which may be used to generate a failure indication, a warning light, or an audible alarm.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (MPEP 2143.03). Applicants respectfully submit that neither Conklin nor Taylor, alone or in combination, teach or suggest the claimed invention. Claim 1 recites an in-line particulate detector including "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, which housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer...a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion...a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode...a second photodiode disposed within said housing adjacent said first photodiode and offset from a normal unimpeded path between said laser diode and said first photodiode such that a baseline level of an unimpeded generated light beam is detected by said second photodiode...circuitry coupled to said first and second photodiodes to monitor the ratio of light intensities measured by said first and second photodiode to indicate the presence of particulate within an introduced fuel flow...a control structure inputted into said circuitry to initiate a system control based on the ratio of light intensities."

Specifically, neither Conklin nor Taylor, alone or in combination, describe or suggest a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, wherein the housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through the inner flow portion to a fuel consumer. Rather, in contrast to the present invention, Conklin describes, at Column 2, lines 54-58, that "[o]rifice 5 allows light to pass from source 1 to transparent sample tube 6" and "orifice 8 which allows light to pass from sample tube 6 to a transmittance photocell 9", and at Column 3, lines 36-37, that "a visually clear fluid...is introduced into sample tube 6." Conklin does not describe nor suggest a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, but rather Conklin describes a metal block 4 surrounding a transparent

sample tube 6. If it is interpreted that sample tube 6 is the housing of the present Claims, then Conklin does not describe nor suggest a laser diode light source disposed within the housing for emitting a light beam within the inner flow portion. Taylor describes a quartz tube 84 that is received in an optical carrier support sleeve 86, which is adapted to carry the transmitter LED 90 and is also adapted to contain a circuit board 92 for holding the receiver IC 94. Accordingly, Taylor does not describe nor suggest a housing having an inner flow portion that is in flow communication with a fluid inlet and a fluid outlet. If it is interpreted that quartz tube 84 is the housing of the present Claims, then Taylor does not describe nor suggest a laser diode light source disposed within the housing for emitting a light beam within the inner flow portion.

Further, neither Conklin nor Taylor, considered alone or in combination, teach or suggest the claimed element of a laser diode light source disposed within the housing for emitting a light beam within the inner flow portion. Rather, in contrast to the present invention, Conklin describes a light source including a bulb that is rigidly mounted in a metal block that surrounds the transparent sample tube, and Taylor describes a transmitter LED that is carried by an optical carrier support sleeve that receives a quartz tube.

Applicants respectfully disagree with the assertion in the Office Action that "it would have been obvious to one having ordinary skill in the art at the time of invention to include a laser diode and a photodiode, as a substitution of art recognized equivalents." In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958) (MPEP 2144.06). Applicants submit that a laser diode would not be considered a recognized equivalent to the light source as described by Conklin. Specifically, Conklin describes the light source as a lamp at Column 3, line 19, and at Column 3, line 39 as a bulb. In the present specification, at page 7, line 2, a laser light is advantageously described as, "a combination of low divergence angle with high intensity and relatively high electrical efficiency." Moreover, Conklin describes at column 3, lines 38-40 that "light from the bulb...is made essentially monochromatic by placing filter 7 in its path." As is known in the art, laser light is inherently monochromatic without additional filtering, such that laser light consists of essentially one wavelength, having its origin in stimulated emission from one set of atomic energy levels. For at least the above reasons, Applicants

submit it would not be obvious to include a laser diode and a photodiode, as a substitution of art recognized equivalents for a bulb and a photocell.

Applicants also disagree with the assertion in the Office Action that it "would have been obvious to one having ordinary skill in the art at the time of the invention to install the device between adjacent portions of the pipe-line." Conklin and Taylor each require a transparent sample tube or quartz tube, respectively, in the process stream around which the device is positioned. The claimed invention includes a housing with an inner flow portion, such that the fluid being measured flows through the housing, whereas Conklin and Taylor each describe a device wherein the fluid being measured flows through a transparent tube and the housing does not include an inner flow portion.

Applicants agree with the assertion within the Office Action that "Conklin fails to specifically state that the sensor is mounted in-line between adjacent portions of a pipeline." Applicants also submit that Taylor also fails to describe or suggest that the sensor is mounted in-line between adjacent portions of a pipeline. Rather, Applicants respectfully submit that Conklin and Taylor describe a transparent sample tube and transparent quartz tube, respectively, and do not describe nor suggest a housing that is installed in-line between adjacent portions of a pipeline in a system to permit a fuel flow from a fuel source through the inner flow portion to a fuel consumer.

For the above reasons, Applicants respectfully submit the presently pending claims are patentably distinguishable from the cited combination and Applicants request that the Section 103 rejection of Claims 1-4, 23-26, 37 and 38 be withdrawn.

The rejection of Claims 6-9 and 27-31 under 35 U.S.C. § 103(a) as being unpatentable over Conklin et al. (U.S. Patent 3,358,148) and Taylor et al. (U.S. Patent 5,828,458) in view of Infante (U.S. Patent 5,742,064) is respectfully traversed.

Conklin et al. and Taylor et al. are described above. Infante describes an optical detection system that includes a probe (5) connected to a pipe (10) in a slip stream configuration such that fluid (15) from the pipe is routed through the probe located outside the pipe. An optical waveguide is connected on one end to the probe and on the other end to an analyzer device (25) such as a spectrometer (35) for analyzing the wavelength of light through the waveguide. A computer is electrically coupled to the spectrometer to process the

data received from the spectrometer and determine the amounts and types of impurities contained in the petroleum.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Conklin et al. and Taylor et al. according to the teachings of Infante. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from several patents in an attempt to arrive at the claimed invention. Specifically, Conklin et al. is cited for its teaching that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, Taylor et al. is cited for its teaching that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm, and Infante is cited for its teaching that a computer, electrically coupled to a spectrometer, can process data received from the spectrometer and determine the amounts and types of impurities contained in petroleum. Since there is no teaching or suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Applicants respectfully submit that none of Conklin et al., Taylor et al., and Infante, considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claims 6-9 depend, directly or indirectly, from independent Claim 1 which recites an in-line particulate detector that includes "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, which housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer; a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion; a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode; a second photodiode disposed within said housing adjacent said first photodiode and offset from a normal unimpeded path between said laser diode and said first photodiode such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; circuitry coupled to said first and second photodiodes to monitor the ratio of light intensities measured by said first and second photodiode to indicate the presence of particulate within an introduced fuel flow; and a control structure inputted into said circuitry to initiate a system control based on the ratio of light intensities."

None of Conklin et al., Taylor et al., and Infante, alone or in combination, describe or suggest an in-line particulate detector that includes a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, in which the housing is installed in-line between adjacent portions of a pipeline in a system to permit a fuel flow from a fuel source through the inner flow portion to a fuel consumer, a laser diode light source disposed within the housing, a first photodiode disposed within the housing, a second photodiode disposed within the housing adjacent the first photodiode and offset from a normal unimpeded path between the laser diode and the first photodiode. More specifically, none of Conklin et al., Taylor et al., and Infante considered alone or in combination, describe or suggest "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet." Rather, Conklin et al. describes a metal block surrounding a transparent sample tube through which a fluid may flow through. If it is interpreted that the sample tube is the housing of the present Claims, then Conklin et al. do not describe nor suggest a laser

diode light source disposed within the housing for emitting a light beam within the inner flow portion. Taylor describes that a quartz tube is received in an optical carrier support sleeve, which is adapted carry the transmitter LED and is adapted to contain a circuit board adapted to hold the receiver IC. As such, Taylor also does not describe nor suggest a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet. If it is interpreted that the quartz tube is the housing of the present Claims, then Taylor does not describe nor suggest a laser diode light source disposed within the housing for emitting a light beam within the inner flow portion. For at least the reasons set forth above, Claim 1 is submitted to be patentable over Conklin et al. and Taylor et al. in view of Infante.

Claims 6-9 depend, either directly or indirectly, from independent Claim 1. When the recitations of Claims 6-9 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 6-9 likewise are patentable over Conklin et al. and Taylor et al. in view of Infante.

Claims 27-31 depend, either directly or indirectly, from independent Claim 23 which recites an in-line particulate detector including "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, which housing is installed in-line between adjacent portions of a pipeline in a system to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer; a means for emitting a light beam within said inner flow portion; a first means for detecting substantially full strength of an unimpeded light beam generated by said means for emitting; a second means offset from a normal unimpeded path between said light emitting means and said first means for detecting a baseline level of unimpeded light beam generated by said means for emitting; a means for comparing the light intensities detected by said first and second means for detecting, to determine the presence of particulate within an introduced flow; and a control means for receiving from said comparing means a signal to initiate a system control based on the ratio of light intensities."

None of Conklin et al., Taylor et al, and Infante, alone or in combination, describe or suggest an in-line particulate detector that includes a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, in which the housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through said

inner flow portion to a fuel consumer, a means for comparing the light intensities detected by a first and second means for detecting, to determine the presence of particulate within an introduced flow, and a control means for receiving from the comparing means a signal to initiate a system control. Moreover, none of Conklin et al., Taylor et al., and Infante considered alone or in combination, describe or suggest "a means for comparing the light intensities detected by a first and second means for detecting, to determine the presence of particulate within an introduced flow, and a control means for receiving from the comparing means a signal to initiate a system control." Rather, Conklin et al. describe that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, Taylor et al. describe that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm, and Infante describes that a computer electrically coupled to a spectrometer can process data received from the spectrometer and determine the amounts and types of impurities contained in petroleum. For the reasons set forth above, Claim 23 is submitted to be patentable over Conklin et al. and Taylor et al. in view of Infante.

Claims 27-31 depend, either directly or indirectly, from independent Claim 23. When the recitations of Claims 27-31 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 27-31 likewise are patentable over Conklin et al. and Taylor et al. in view of Infante.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejections of Claims 5-9 and 27-31 be withdrawn.

The rejection of Claims 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Conklin et al. (U.S. Patent 3,358,148) in view of Tanaka et al. (U.S. Patent 4,270,049) and further in view of Taylor et al. (U.S. Patent 5,828,458) is respectfully traversed.

Conklin et al. and Taylor et al. are described above. Tanaka et al. describe a liquid leakage detection system that includes an oil detector cable (14) including a light guide (10') that is formed using a plurality of fiber optics each of which includes a light guide core (10) and a cladding (11) which is stranded or otherwise assembled and coated with a sheath (13) which serves to absorb oil. Tanaka et al. also describe a wireless transmission line in

communication with a centralized monitor station wherein the incoming signal is applied to a comparator (21) and used to generate visual and audio alarms.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Conklin et al. according to the teachings of Tanaka et al. and Taylor et al. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on a combination of teachings selected from several patents in an attempt to arrive at the claimed invention. Specifically, Conklin et al. is cited for its teaching that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, Tanaka et al. is cited for its teaching that a liquid leakage detection system includes an oil detector cable, formed using a plurality of fiber optics, can generate a signal, and a wireless transmission line connected to a centralized monitor station wherein the incoming signal is used to generate visual and audio alarms, and Taylor et al. is cited for its teaching that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm. Since there is no teaching or suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

None of Conklin et al., Tanaka et al., and Taylor et al., considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 15 recites an in-line particulate detector including "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, which housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer; a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion; a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode; a second photodiode disposed within said housing adjacent said first photodiode and offset from a normal unimpeded path between said laser diode and said first photodiode such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; circuitry coupled to said first and second photodiode to monitor the ratio of light intensities measured by said first and second photodiodes to indicate the presence of particulate within an introduced fuel flow; a control structure inputted into said circuitry to initiate a system control based on the ratio of light intensities; at least one remote unit for transmitting signals generated from said first and second photodiodes; a central station; and a communications link."

None of Conklin et al., Tanaka et al., and Taylor et al., considered alone or in combination, describe or suggest an in-line particulate detector including a laser diode light source, a first photodiode, a second photodiode, circuitry coupled to the first and second photodiode to monitor the ratio of light intensities measured by the first and second photodiodes, and a control structure inputted into the circuitry to initiate a system control based on the ratio of light intensities. Moreover, none of Conklin et al., Tanaka et al., and Taylor et al., considered alone or in combination, describe or suggest "a control structure inputted into the circuitry to initiate a system control based on the ratio of light intensities." Rather, Conklin et al. describe that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, Tanaka et al. describe that a liquid leakage detection system that includes an oil detector cable that is formed using a plurality of

fiber optics can generate a signal, and a wireless transmission line connected to a centralized monitor station wherein the incoming signal is used to generate visual and audio alarm, and Taylor et al. describe that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm. For at least the reasons set forth above, Claim 15 is submitted to be patentable over Conklin et al. in view of Tanaka et al. and further in view of Taylor et al.

Claim 16 depends directly from independent Claim 15. When the recitations of Claim 16 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claim 16 likewise is patentable over Conklin et al. in view of Tanaka et al. and further in view of Taylor et al.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejections of Claims 15-16 be withdrawn.

The rejection of Claims 17-22 under 35 U.S.C. § 103(a) as being unpatentable over Conklin et al. (U.S. Patent 3,358,148), Tanaka et al. (U.S. Patent 4,270,049), and Taylor et al. (U.S. Patent 5,828,458) and further in view of Lamensdorf (U.S. Patent 5,568,121) is respectfully traversed.

Conklin et al., Tanaka et al., and Taylor et al., are described above. Lamensdorf describes a main monitoring station (10) that communicates with a plurality of remote attendants (12) through a conventional interface or modem (14) and a base station radio (16) through an antenna (18). Lamensdorf also describes that a gas detection interface (30) may be provided at the portable attendant (12) to detect and measure the level of selected gases at the remote site. Where the presence or absence of specific gases is hazardous, an alarm is sounded at both the portable attendant and the main monitoring center.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. Obviousness cannot be established by merely suggesting that it would have been obvious to one of ordinary skill in the art to modify Conklin et al. according to the teachings of Tanaka et al., Taylor et al., and Lamensdorf. More specifically, as is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Rather, the present Section 103 rejection appears to be based on

a combination of teachings selected from several patents in an attempt to arrive at the claimed invention. Specifically, Conklin et al. is cited for its teaching that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, and Tanaka et al. is cited for its teaching that a liquid leakage detection system that includes an oil detector cable that is formed using a plurality of fiber optics can generate a signal, and a wireless transmission line connected to a centralized monitor station wherein the incoming signal is used to generate visual and audio alarms. Taylor et al. is cited for its teaching that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm, and Lamensdorf is cited for its teaching that a main monitoring station communicates with a plurality of remote attendants through a conventional interface or modem and a base station radio through an antenna and when the presence or absence of specific gases is hazardous, an alarm is sounded at both the portable attendant and the main monitoring center.

Since there is no teaching or suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants respectfully request that the Section 103 rejection be withdrawn.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Applicants respectfully submit however, that none of Conklin et al., Tanaka et al., Taylor et al., and Lamensdorf, considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claims 17-22 depend, either

directly or indirectly, from independent Claim 15 which recites an in-line particulate detector including "a housing having an inner flow portion in flow communication with a fluid inlet and a fluid outlet, which housing is installed in-line between adjacent portions of a pipeline in a system and is removably disposable between the adjacent portions of the pipeline to permit a fuel flow from a fuel source through said inner flow portion to a fuel consumer; a laser diode light source disposed within said housing for emitting a light beam within said inner flow portion; a first photodiode disposed within said housing positioned opposite and substantially normal to said laser diode light source such that substantially full strength of an unimpeded generated light beam is detected by said first photodiode; a second photodiode disposed within said housing adjacent said first photodiode and offset from a normal unimpeded path between said laser diode and said first photodiode such that a baseline level of an unimpeded generated light beam is detected by said second photodiode; circuitry coupled to said first and second photodiode to monitor the ratio of light intensities measured by said first and second photodiodes to indicate the presence of particulate within an introduced fuel flow; a control structure inputted into said circuitry to initiate a system control based on the ratio of light intensities; at least one remote unit for transmitting signals generated from said first and second photodiodes; a central station; and a communications link."

None of Conklin et al., Tanaka et al., Taylor et al., and Lamensdorf, alone or in combination, describe or suggest an in-line particulate detector including a laser diode light source, a first photodiode, a second photodiode, circuitry coupled to the first and second photodiode to monitor the ratio of light intensities measured by the first and second photodiodes, and a control structure inputted into the circuitry to initiate a system control based on the ratio of light intensities. Moreover, none of Conklin et al., Tanaka et al., Taylor et al., and Lamensdorf, considered alone or in combination, describe or suggest "a control structure inputted into the circuitry to initiate a system control based on the ratio of light intensities." Rather, Conklin et al. describe that an apparatus output can be observed on a meter or can be adapted to actuate either indicating or recording instruments of the electromechanical type to provide a visual measure of the relative severity of haze, and Tanaka et al. describe that a liquid leakage detection system that includes an oil detector cable that is formed using a plurality of fiber optics can generate a signal, and a wireless transmission line connected to a centralized monitor station wherein the incoming signal is

used to generate visual and audio alarm. Taylor et al. describe that signal changes in the outputs from the photodiodes may be used to generate a failure indication, a warning light, or an audible alarm, and Lamensdorf describe that a main monitoring station communicates with a plurality of remote attendants through a conventional interface or modem and a base station radio through an antenna and when the presence or absence of specific gases is hazardous, an alarm is sounded at both the portable attendant and the main monitoring center.

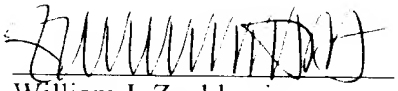
For at least the reasons set forth above, Claim 15 is submitted to be patentable over Conklin et al., Tanaka et al., and Taylor et al., and further in view of Lamensdorf.

Claims 17-22 depend, either directly or indirectly, from independent Claim 15. When the recitations of Claims 17-22 are considered in combination with the recitations of Claim 15, Applicants submit that dependent Claims 17-22 likewise are patentable over Conklin et al., Tanaka et al., and Taylor et al., and further in view of Lamensdorf.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejections of Claims 17-22 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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